

Science

Grade 2

Earth and Space Sciences

The Universe

Observe constant and changing patterns of objects in the day and night sky.

- * Observe and describe how the moon appears a little different every day but looks nearly the same again about every four weeks.
- * Observe and describe how the sun, moon and stars all appear to move slowly across the sky.
- * Recognize that there are more stars in the sky than anyone can easily count.
- * Understand how the earth, moon and sun move in relation to each other.

Earth Systems

Observe, describe and measure changes in the weather, both long term and short term.

- * Describe weather phenomena using measurable quantities such as temperature, cloud cover, and precipitation.
- * Observe and describe weather changes occurring throughout the day, as well as seasonal changes occurring in a repeating seasonal pattern.

Life Sciences

Characteristics and Structure of Life

Discover that there are living things, non-living things and pretend things, and describe the basic needs of living things (organisms).

- * Explain that animals, including people, need air, water, food, living space and shelter; plants need air, water, nutrients (e.g. minerals), living space and light to survive.

Explain how organisms function and interact with their physical environment.

- * Compare Ohio plants during the different seasons by describing changes in their appearance (e.g. evergreen trees compared to deciduous trees).
- * Compare the activities of Ohio's common animals (e.g., squirrels, chipmunks, deer, butterflies, bees, ants, bats and frogs) during the different seasons by describing changes in their behaviors and body covering.
- * Compare the habitats of many different kinds of Ohio plants and animals and some of the ways animals depend on plants and each other.
- * Explain why organisms can survive only in environments that meet their needs (e.g. organisms that once lived on Earth have disappeared for different reasons such as natural forces or human-caused effects).
- * Identify and investigate the different structures of seeds and plants (e.g. seed coat, embryo, leaf, stem, root) and how those structures enable them to survive in different habitats and seasons.

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- * Identify several distinct environments that support different kinds of organisms.

Diversity and Interdependence of Life

Discover that there are living things, non-living things and pretend things, and describe the basic needs of living things (organisms).

- * Explain that food is a basic need of plants and animals (e.g. plants need sunlight to make food grow, animals eat plants and/or other animals for food, food chain) and is important because it is a source of energy (e.g. energy used to play, ride bicycles, read, etc.).

Heredity

Describe similarities and differences that exist among individuals of the same kind of plants and animals.

- * Compare similarities and differences among individuals of the same kind of plants and animals, including people.
- * Recognize that plants and animals of a specific species produce offspring with the same general characteristics (e.g. maple seeds always produce maple trees, adult squirrels produce baby squirrels).

Physical Sciences

Forces and Motion

Recognize sources of energy and their uses.

- * Identify sources of sound and light energy.

Recognize that light, sound and objects move in different ways.

- * Explore how light is reflected off of different objects and surfaces in different ways.
- * Explore how sound travels in different ways through different substances (e.g. water, metal, air).
- * Explore how things make sound (e.g., rubber bands, tuning fork and strings).
- * Explore with flashlights and shadows that light travels in a straight line until it strikes an object.

Science and Technology

Understanding Technology

Explain why people, when building or making something, need to determine what it will be made of and how it will affect other people and the environment.

- * Explain how developing and using technology involves benefits and risks.
- * Investigate why people make new products or invent new ways to meet their individual wants and needs.
- * Predict how building or trying something new might affect other people and the environment.

Science

Scientific Inquiry

Doing Scientific Inquiry

Ask a testable question.

- * Ask "how can I/we" questions.
- * Ask "how do you know" questions (not "why" questions) in appropriate situations and attempt to give reasonable answers when others ask questions.
- * Explore and pursue student-generated "how" questions.

Design and conduct a simple investigation to explore a question

- * Measure properties of objects using tools such as rulers, balances and thermometers.
- * Use appropriate safety procedures when completing scientific investigations.
- * Use appropriate tools and simple equipment/instruments to safely gather scientific data (e.g., magnifiers, non-breakable thermometers, timers, rulers, balances and calculators and other appropriate tools).

Gather and communicate information from careful observations and simple investigations through a variety of methods.

- * Recognize that explanations are generated in response to observations, events and phenomena.
- * Share explanations with others to provide opportunities to ask questions, examine evidence and suggest alternative explanations.
- * Use evidence to develop explanations of scientific investigations. (What do you think? How do you know?)
- * Use whole numbers to order, count, identify, measure and describe things and experiences.

Scientific Ways of Knowing

Ethical Practices

Recognize the importance of respecting all living things.

- * Describe ways in which using the solution to a problem might affect other people and the environment.

Nature of Science

Recognize that there are different ways to carry out scientific investigations. Realize that investigations can be repeated under the same conditions with similar results and may have different explanations.

- * Explain why scientific investigations generally work the same way under the same conditions.
- * Explain why scientists review and ask questions about the results of other scientists' work.